

Math+Science Connection

Intermediate Edition

Building Understanding and Excitement for Children

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Wake County Public Schools ALP II/Title I
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INFO BITS



All-day math

Does your youngster realize she does math all day long? Challenge her to carry a notepad for a day and write down each time she uses math (buys lunch, tells time, for instance). *Idea:* Show her how you use math by keeping your own list (examples: measuring laundry detergent, paying bills).

Ice balloon

Let your child explore the properties of ice with this activity. Have him fill a balloon with water, tie it, and put it in the freezer. When it's frozen solid, help him cut the knot and peel off the balloon. What does the ice look like? What happens if he shines a flashlight on it? Pokes it with toothpicks?

Book picks

■ *Rumpelstiltskin* has returned—with a magic multiplying stick. In *Multiplying Menace* (Pam Calvert), a young boy must use his math skills to defeat the fairy tale villain.

■ In *Weird But True!* learn about topics ranging from arachibutyrophobia (fear of peanut butter sticking to the roof of your mouth) to the zedonk (half zebra, half donkey). A fun reference book by National Geographic.

Worth quoting

"Music is the pleasure the human mind experiences from counting without being aware that it is counting." *Gottfried Leibniz*

Just for fun

Q: What's the difference between an Indian elephant and an African elephant?

A: About 3,000 miles.



Math at the grocery store

Need to go food shopping? Why not turn it into an opportunity for your child to practice what he's learning in math. Try these ideas.

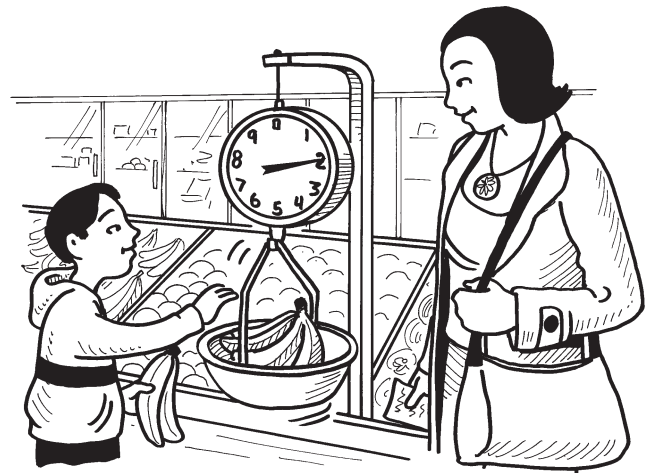
Weigh and multiply.

Fruits and vegetables are often sold by the pound. Ask your youngster to compute how much your produce will cost. For example, if you want 2 lbs. of bananas, he can weigh a bunch and add or subtract bananas until he has 2 lbs. Then, he should multiply to determine the cost (2 lbs. x 49 cents = 98 cents).

Comparison shop. Let your child help you save money and learn to be a better consumer. Ask him to read unit-pricing labels on shelves to find the best value (43 cents per ounce for one brand of pasta sauce vs. 47 cents per ounce for another brand). Or he can look for the better deal: one box of cereal for \$2.79

or two boxes for \$5? ($\$5 \div 2 = \2.50 per box, so you'll save money buying two boxes and storing one for later.)

Estimate the total. Ask your youngster to predict your total bill by keeping track of what you put in your cart. With each item, he should check the price and round it up or down to the nearest dollar. As you go, he can keep a running tally on paper, in his head, or on a calculator. At checkout time, see how close he came. 📦



Is it alive?

Here's an activity that will show your youngster what's really in the bread she eats!

Have her pour a package of yeast into a bowl and examine it. Does it look alive? (No. It looks like sand and doesn't move.) Next, let her add 1 tsp. sugar and $\frac{1}{4}$ cup warm water. After about 10 minutes, she'll see the mixture bubbling, moving—and looking alive!

Those bubbles are carbon dioxide, a gas that's formed when the yeast "eats" the sugar. You can explain that yeast is actually a live, single-celled fungus that becomes active when mixed with warm water and sugar. In bread making, active yeast feeds on the sugars in flour and releases the carbon dioxide that makes bread rise.

Your youngster can see evidence of this process when she has a sandwich. Ask her to look for "holes" in the bread—those are gas bubbles that were trapped inside the dough before it was baked. 📦



What's the angle?

Learning about angles is an important step in understanding geometry. Try these suggestions with your youngster:

- Help her use her arms to demonstrate angles. For a *right angle*, she can stretch her left arm straight up and her right arm straight out to her side. An *acute angle* is smaller, so have her move her arms closer together. And an *obtuse angle* is larger than a right angle, so she should move her arms wider.
- Next, see how many angles your child can find in the alphabet. Have her print all 26 uppercase letters on a large sheet of paper. With different-colored pens, have her mark right angles



(one in "L" and four in "H," for example), acute angles (three in "A" and one in "V"), and obtuse angles (two in "X" and one in "Y").

● Together, look for angles in the real world. Right angles will be easiest to find—they'll be in corners of rooms where one wall meets another, on window frames, or at the edge of a square sandbox. But your youngster will also be able to find angles that are acute (spokes in a bicycle wheel) and obtuse (a door that's wide open). Suggest that she make a three-column chart (name of object, type of angle, sketch of the angle) to record her findings.

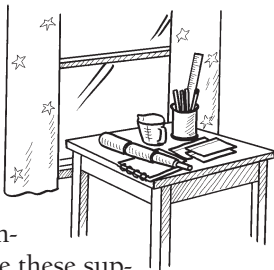
Q & A A science nook

Q: My daughter doesn't seem interested in science. How could I encourage her at home?

A: Try creating her own science lab right in your home! Together, pick a spot near a window where she can observe weather conditions and have sunlight for experiments.

Then, add tools she could have fun with, such as a magnifying glass, binoculars, a microscope, magnets, or a telescope. Let her gather materials like paper, index cards, graph paper, pencils, markers, and colored pencils. She can use these supplies to record data and draw pictures of objects and changes she observes.

To find ideas for experiments, visit the library for science books and field guides. As she decides on projects, she might put materials for each one in a separate container. For example, she could start a nature box with rocks, leaves, acorns, feathers, and old bird nests.



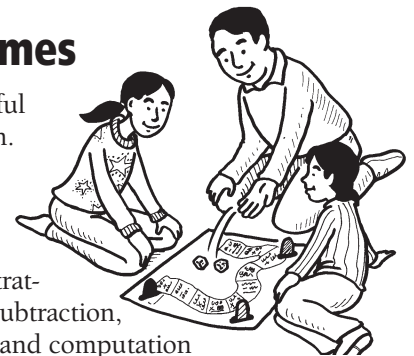
MATH CORNER

Playing math games

Board games are a wonderful family activity—and a great way to practice math. Here are ideas:

1. Use a variety of games to work on different skills. For example, Mastermind, Blokus, and Othello let children make predictions and plot strategy. Yahtzee is good for practicing addition and subtraction, and 24 Math is a fun way to work on math facts and computation skills. *Note:* Look for games at discount stores or yard sales. You could also swap games with neighbors or relatives.

2. Help your youngsters create their own math game. On a sheet of cardboard, have them draw a twisting path and divide it into game squares. On each square, they can write in math problems to direct players' moves ($15 - 9 =$ move 6 spaces, or $23 \times 0 =$ no move). To play, use dice and game pieces from other games.



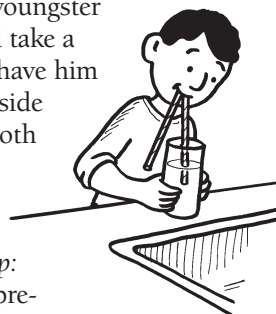
SCIENCE LAB

Vacuum power

Does your child know what a vacuum is? He'll find out with this clever experiment.

You'll need: cup, water, 2 drinking straws

Here's how: Have your youngster fill the cup with water and take a sip with one straw. Then, have him hold the second straw outside the cup and sip through both straws at the same time. Finally, he can put both straws in the water and sip from them together. *Tip:* At each stage, ask him to predict the outcome before he sips.



What happens? When your child sips with one or both straws in the water, the water comes up as expected. But when one straw is in the water and the other is out, he can't sip the water at all!

Why? Sucking on a straw in liquid creates a vacuum—or an empty space—which the water rushes in to fill. When he sucks on both straws (one in the water and the other out of the water), however, the air coming through the straw outside the drink prevents a vacuum from forming—so the straw in the water won't work.

OUR PURPOSE

To provide busy parents with practical ways to promote their children's math and science skills.

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